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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/770,884	02/02/2004	Ronald E. Loving	1062	1064

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04/21/2006

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EXAMINER

BARROW, JAMES G

ART UNIT

PAPER NUMBER

3749

DATE MAILED: 04/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/770,884	Applicant(s) LOVING, RONALD E.	
	Examiner James G. Barrow	Art Unit 3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 02/02/2004 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the information disclosure statement does not have the application number of the application in which the information disclosure statement is being submitted [§ 1.98 (a) (1) (i)], a column that provides a space, next to each document to be considered, for the examiner's initials [§ 1.98 (a) (1) (ii)], a heading that clearly indicates that the list is an information disclosure statement [§ 1.98 (a) (1) (iii)], and each U.S. patent listed in an information disclosure statement must be identified by inventor, patent number, and issue date [§ 1.98 (b) (1)]. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Drawings

2. Color photographs and color drawings are not accepted unless a petition filed under 37 CFR 1.84(a)(2) is granted. Any such petition must be accompanied by the appropriate fee set forth in 37 CFR 1.17(h), three sets of color drawings or color photographs, as appropriate, and, unless already present,

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an amendment to include the following language as the first paragraph of the brief description of the drawings section of the specification:

The patent or application file contains at least one drawing executed in color. The Office upon request and payment of the necessary fee will provide copies of this patent or patent application publication with color drawing(s).

3. Color photographs will be accepted if the conditions for accepting color drawings and black and white photographs have been satisfied. See 37 CFR 1.84(b)(2).

4. Applicant is advised to resubmit drawings 3 and 4 in black ink. The Office accepts color drawings and black and white photographs only in those rare cases when the subject matter cannot be illustrated in black ink or grey half tones.

5. The drawings are objected to because on page 4, line 22, it is "heat reactor housing (20)" whereas in figure 2 it is called "combustion chamber 20". Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must

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be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

6. Claim 1 is objected to because of the following informalities: In claim 1, lines 4-5, the phrase "vertically positioned within said elongated tubular housing" should be –perpendicularly positioned along the axis of the tubular housing–. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claim 5 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for "each of the flow conditioners (28) are substantially in the form of a circular disc (made from a high heat resistant material)" (P: 6, L: 8-9), does not reasonably provide enablement for "said flow conditioner coated with a high heat-resistant material" (C: 5, L: 1-2). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. This omission would lead to undue experimentation by anyone making the invention given the amount of direction provided by the inventor.

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9. Claim 9 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for "the heat reactor system of the present invention virtually eliminates all pollution such as hydrocarbons, particulates (such as carbon particles in the form of soot from diesel engines), and offensive fuel odors while being very energy efficient" (Page: 6, L: 25-28), does not reasonably provide enablement for "resultant pollution free hot gases and/or air" (C: 9, L: 17). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. While the specification supports a heat reactor that produces low or virtually no pollution (99.99%) it does not support the breadth of a claim asserting pollution free combustion.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1, 2, 4, and 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art in figure 1 and in view of Moore (1,745,632). The admitted prior art discloses an elongated tubular housing having an inlet duct for receiving injected fuel that obviously could be aviation fuel, oil, kerosene, gas, or alcohol, and air, and an outlet duct for expelling heated gasses. However, the admitted prior art does not disclose the elongated tubular housing being

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partitioned internally by multiple vertically positioned flow conditioners having circular disc shapes with multiple slits bent outwardly forming vanes that direct the airflow outwardly and cross bars forming at least a first combustion chamber and multiple reactor compartments made of a high heat resistant material. Moore teaches vertically positioned flow conditioners 11 (see figure 3) having circular disc shapes with multiple slits (see figure 2) bent outwardly forming vanes (12,13,14,15) that "break up the gases, and deflect them outwardly, and in such manner as to thoroughly mix and intimately diffuse said gases into a homogeneous mixture" (P: 2, L: 45-47) and "the blades, baffles or deflectors of the several sets are so constructed and arranged that when the exhaust gases impinge thereagainst, such gases will be deflected in a spiral direction onto the faces of an adjacent set" (Page: 2, L: 24-29) resulting in increased dwell time with the heavier materials including hydrocarbons, carbon and any other heavy molecules of the fuel therein to be directed to an outermost area of said reactor compartment due to the centrifugal force and are retained in the outermost area until converted to a gaseous form; having cross bars (see figure 2); partitioning housing (1,2); and "made of a heat resistant material, if desired, from material that will not be affected by the heat of the exhaust gases" (Page: 2, L: 51-54) in the analogous art of internal combustion engines for the purpose of "thoroughly mixing the exhaust gases, and for diffusing the several gases throughout each other, so that the resulting mixture has a minimum deleterious action" (Page: 1, L: 36-42). It would have been a conventional and obvious attachment expedient to one of ordinary skill in the art at the time the invention was made to combine

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the exhaust treatment means of Moore with the acknowledged prior art in order to thoroughly mix the exhaust gas, thus reducing their deleterious action.

Regarding claim 2, it is the Examiner's position it would have been obvious that the elongated tubular housing of the admitted prior art or of Moore would be selected of a material having desirable properties such as a high heat resistant material to obviously withstand the high temperatures from the burning fuel within. Regarding claim 8, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to put tabs on the flow conditioning discs for mounting them within the elongated tubular housing as a matter of conventional and obvious attachment expedient.

One of ordinary skill in the art would have expected Applicant's invention to perform equally well with the discs 11 inserted in grooves 10, as disclosed by Moore, because the grooves 10 perform the same function as the tabs.

Therefore, it would have been an obvious matter of design choice to modify Moore to obtain the invention as specified in claim 8. Furthermore, Applicant has not disclosed that using tabs instead of grooves to attach the discs provides an advantage, is used for a particular purpose, or solves a stated problem.

Regarding claim 9, the limitation "resultant pollution free hot gases and/or air may" (C: 9, L: 17) is given little patentable weight, as it is a desired result.

12. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in figure 1 and Moore (1,745,632) as applied to claim 1 above, and further in view of Gordon (4,183,896). The admitted prior art in figure 1 or Moore (1,745,632) does not disclose the tubular housing or the baffles being

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coated with a heat resistant material. Gordon teaches the “discs 13 and 14 are coated with a thick layer of porcelain” (C: 3, L: 48-50) and the inner shell (18,20) are coated with “a protective heat conducting material 21” in the analogous art of exhaust gas treatment for the purpose of “to provide strength and heat retention properties thereto” (C: 3, L: 50-51) of the discs and to conduct heat from the inner shell. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the coating as taught by Gordon on the flow conditioners and housing of Moore in order for “the discs 13 and 14 become extremely hot ... the exhaust fumes are propelled through the series of discs, the foreign or polluted materials remaining in the exhaust fumes after discharge from the exhaust manifold are thereby burned up virtually completely” (C: 5, L: 14-19).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nageli et al (5,584,178) discloses a gas combustor with the flow conditioner before the combustion point. Lyman (4,109,753) discloses a muffler having tabs to locate the flow conditioners. Jankus (665,668), Gwynn (738,536), Schmitt (1,57,256), Aaron (1,782,396), Haynes (1,957,012), Bacchetti-Righetti (2,063,270), Schmitt (2,077,776), McCrink (3,683,625), Monk (3,93,767), Venter (4,683,978), and Kazen (5,411,013) disclose flow conditioners that swirl the exhaust gas. Arnold (2,369,995) and Sawyer (2,891,169) disclose cross bar structure for exhaust means.


Contact Information

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to James G. Barrow whose telephone number is (571) 272-4870. The examiner can normally be reached on M-F, 9:30 A.M.-6:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg can be reached on (571) 272-4828. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


James Barrow

EHUD GARTENBERG
SUPERVISORY PATENT EXAMINER

